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Alejandro Lastra & Dorina Pojani

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'Urban acupuncture' to alleviate stress in informal settlements in Mexico

Alejandro Lastra and Dorina Pojani

School of Earth and Environmental Sciences, The University of Queensland, Brisbane, Australia

ABSTRACT

This paper explores whether smaller-scale physical space interventions ('urban acupuncture') have the power to alleviate the stress, social pathologies and political disengagement experienced by the residents of informal settlements. The case study is Tepito, a barrio in Mexico City. The results, based on 20 qualitative interviews with local residents, support the idea that an 'urban acupuncture' approach has a high potential in this respect. In view of these findings, the authors argue that an indirect approach, focused on physical space, might, at least in the short term, be more productive in empowering of informal settlement dwellers than direct efforts at political organization. Physical, economic and political spaces are intrinsically linked. Little political engagement can be expected if people live in poor physical environments. While certainly not a panacea, acupunctural interventions might trigger much broader changes than initially intended.

Introduction

Increased human stress levels, reduced wellbeing and even mental illnesses have been attributed to unpleasant built environments. These problems often translate into weakened community ties, low social trust and weak neighbourhood attachment (Abbott 2012; Lederbogen, Kirsch, and Haddad 2016). Strong communities based on trust are important for individuals, families and societies. They play a role in shaping individual outcomes and helping people adjust to their environment (Meegan and Mitchell 2001). They also help strengthen civic engagement, create stability, increase the performance of social institutions and consolidate democracy (Putnam 1995).

These outcomes are critical everywhere at the present time of political apathy and civic disengagement, in which participation in public life is decreasing. Research has found that communities lacking in social capital retreat into the private sphere and fail to organize for the purpose of addressing even basic neighbourhood needs, such as street cleaning and public space maintenance (Pojani and Buka 2015). This situation creates a vicious circle which is difficult to break. While present in cities everywhere, the negative impacts of unpleasant built environments are rife in developing cities (Suchday et al. 2006), and even more so in

CONTACT Dorina Pojani d.pojani@uq.edu.au

their informal settlements which are amongst the lowest quality, neglected urban spaces (Siddiqui and Pandey 2003).

Most studies of informal settlements deal with them from a political, legal, socio-anthropological and economic perspective. While these are important, in this paper it is argued that an indirect approach based on small-scale urban design might be more productive in empowering of informal settlement dwellers, at least in the short term. Physical and political spaces are intrinsically linked. Little political engagement can be expected if people live in poor physical environments. Alongside awareness raising campaigns and legalization reforms, smaller-scale physical space interventions, i.e. 'urban acupuncture', might greatly improve the quality of life among informal settlement residents, decrease their stress levels, strengthen neighbourhood ties in these impoverished communities, and thus lead to greater engagement and empowerment. In this paper, an 'urban acupuncture' approach includes planting flowers and grass, installing playground equipment, benches, barbeques, picnic booths, sport fields and game tables, applying noise controls, painting façades, sweeping the roads and sidewalks, collecting garbage regularly, and the like. While certainly not a panacea, acupunctural interventions might trigger much broader changes than initially intended (Lydon and Garcia 2015).

Until now, researchers interested in informal settlements have shied away from discussions of urban design for a variety of reasons. First is a conceptualization of informal settlements as fundamentally separate from the formal city, rather than as 'ordinary', everyday phenomena (Lombard 2014). Alternately, informality is seen as a transitional step into formality, despite abundant evidence that the line between the two is increasingly blurred and well-consolidated informal settlements are visually indistinguishable from formal ones (Hernandez-Garcia and Lopez 2011). Finally, potential researchers, especially those based in the Global North, may have been reluctant to highlight urban design issues for fear of being accused of condoning the 'slum chic', in other words, aestheticizing poverty (see Roy and Alsayyad 2004; Cummings 2013). However, ignoring the urban design quality of informal settlements on this basis poses its own ethical dilemmas. Soliciting the views of local residents is crucial in confirming that a focus on physical aspects is not merely a bias of city planners from white, privileged backgrounds.

This paper discusses a *barrio* (a type of 'slum') in the heart of Mexico City, called Tepito. It is one of the oldest settlements in the city, which has experienced major waves of rural migration and informal housing construction at various times. While the area has experienced some tenure regularization, it retains the characteristics of an informal settlement in terms of urban quality. The study is theoretically underpinned by an understanding of the image of the informal city, as well as personal and social consequences of living in deteriorated urban environments. Tepito's situation is placed in the broader context of informal settlement formation in Mexico.

A note follows on the lexicon employed in this paper. Given the negative connotations of the word 'slum', this paper avoids the term and uses 'informal settlement' instead. In Mexico, there is some specific terminology related to this housing typology. In Spanish, *barrio* literally means a ward, quarter or district of a city or town. However, the term is often used to denote a part of a city where poor people live. (In the United States, a barrio is the Latino equivalent of a 'ghetto'.) *Colonias populares* are consolidated informal settlements in built-up areas of the city, while areas of social housing are called *conjuntos*. While outwardly these areas might

appear similar to observers unfamiliar with the terminology and field of study, it is important not to conflate them. In common parlance in Mexico, Tepito is considered a barrio.

Theoretical conceptualization

Two theoretical avenues are explored below: the image of the informal city, especially as it pertains to Latin America, and the relationship between the built environment and social pathologies.

Image of the informal city

Most often, informal settlements are identified as places with negative symbolic capital: pitiful improvisations by the poor and undesirable (Peattie 1992). For local middle classes, these are eyesores; they equate to visual and social pollution. The informal city becomes the 'other' of the formal city and hence essential to its identity. This 'otherness' is informed by untested stereotypes and prejudices about the morals, abilities and values of squatters. This explains why informality continues to signify 'slum' even after physical conditions are upgraded (Kellet and Napier 1995; Dovey and King 2012; Klaufus 2012; De la Hoz 2013; Lombard 2014).

However, the image of informality is not uniformly negative. The city of poverty simultaneously attracts and repels Western visitors (researchers or slum tourists). The aesthetic potency of images of squatter settlements is often captured from a distance or from the air. As such, barrios and favelas may appear as spectacular urban profiles that follow the topographic contours (Dovey and King 2012). Some commentators praise the physical order of informal settlements as picturesque, ingenious, labyrinthine, porous and full of vitality. There is much fascination with its rhizomic structure and idiosyncratic order of accretion. The unique spatiality of informal settlements has been likened to a collage that comprises loosely overlapping layers and governed by an organized chaos (Bernstein-Jacques 2002; De la Hoz 2013).

Some researchers have also provided evidence that squatters aspire to modernization and personal expression in their urban design choices. While modest, informal settlements are part of a struggle for more than bare survival. Through their efforts to hide visible signs of material poverty, squatters seek to assert themselves as full participants in the building of the city and society. A desire for upward mobility, expressed though mimicry of the urban design features and motifs of middle- and upper-class housing is a constant, despite the difference in pedigree and mode of production in 'informal' and 'formal' settlements. Images of beauty and small-scale practices of pride – flowers, birds, shrines, artworks – cut through the dereliction even in the poorest settlements. Clean and ordered homes, yards and streets signify 'decency', 'respectability' and 'civilization', virtues which are typically associated with urban upper classes. The claim to modernity is a claim for respect, dignity and citizenship. It is also associated with long-term commitment to a settlement (Peattie 1992; Kellet and Napier 1995; Kowaltowski 1998; Dovey and King 2012; Klaufus 2012; De la Hoz 2013; Lombard 2014).

The positive urban imagery promoted by this set of commentators has helped foster place identity and legitimize squatting (Turner 1968; Peattie 1992; Hernandez-Garcia and Lopez 2011; Cummings 2013). At the same time, as noted, a focus on urban design has been

criticized for romanticizing poverty and relying on misplaced nostalgia for traditional rural or urban settlements, which were produced under entirely different socio-economic conditions compared to contemporary urban informal settlements. Depoliticized, images of poverty become attractive for place branding and capitalist exploitation, whereas urban-design based slum upgrading programmes let governments off the hook too easily by directing attention away from the deeper political and economic issues that lead to informality – inequality, injustice, exploitation. As such, urban design may be complicit with forms of social reproduction (Kellet and Napier 1995; Roy and Alsayyad 2004).

However, here it is argued that contemporary society – whether living in formal or informal settlements – is becoming increasingly aware that physical and mental health is inextricably linked to the surrounding natural and manmade environment. Disillusionment with the 'machine age' ethos of the twentieth century has led to a realization that humans are components of nature, not simply economic and political beings, and life in deteriorated urban environments has severe consequences on wellbeing.

Relationship between the built environment and social pathologies

While global urbanization has been beneficial in many ways, it has also produced new social and health problems, both physical and mental (Van de Poel, O'Donnell, and Van Doorslaer 2007; Friel 2011). One major health problem connected to urban lifestyles is stress, the levels of which are on the rise in cities and generally higher in urban settlements compared to rural ones (Abbott 2012). The reasons why urban environments are so stressful include high car traffic levels (Miles, Coutts, and Mohamadi 2011), crime, violence and insecurity (Ewart and Suchday 2002; Yeh 2011), high noise levels (Abbott 2012), a shortage of green spaces (Miles, Coutts, and Mohamadi 2011; Tyrväinen et al. 2014) and residential overcrowding (Yeh 2011).[1] While these features are inseparable from urban life the world over, they are exponential and particularly severe in informal settlements, where poverty compounds stress.

In addition to producing individual pathologies, urban stress caused by built environment stressors has also been linked to social pathologies, including low neighbourhood attachment, low social trust among neighbours and low neighbourhood satisfaction (Pojani and Buka 2015). These concepts are defined as follows. *Neighbourhood attachment* is a sense of solidarity and 'we-ness' associated with a locality. *Neighbourhood satisfaction* is a quality of life issue, which depends on an individual's socio-psychological and physical assessment of a neighbourhood. *Social trust* is a component of social capital; an individual's belief that, at worst, others will not knowingly or willingly do him/her harm, and at best, that they will act in his/her interests (Ritzer 2007). Hence the 'broken window' theory, which postulates that urban disorder and vandalism, in a vicious circle, lead to more crime and anti-social behaviour (Wilson and Kelling 1982), and the 'eyes on the street' theory according to which social control, provided casually, voluntarily and even unconsciously by locals within strong communities, constitutes a better form of surveillance than official policing (Jacobs 1961).

Neighbourhood attachment, *neighbourhood satisfaction* and *social trust* are important to 'repair windows' and provide the security of the 'eyes on the street' that benefit individuals, families and societies. These three concepts play a role in shaping residents' individual and social prospects (Meegan and Mitchell 2001). These outcomes are critical in deprived and neglected settlements in the Global South.

However, some commentators have been critical of urban transformations through a 'broken windows' approach when this takes the form of negative 'policing' of communities rather than of positive and collaborative engagement. Unsurprisingly, policing entails higher levels of urban marginality, poverty, insecurity and disenfranchisement (Smith 1992), which coupled with traffic, noise and overcrowding lead to stress, poor neighbourhood relations and low engagement in cities.

On the other hand, urban beautification, scenery and greenery have been found to alleviate stress, improve wellbeing and contribute to environmental satisfaction (Kaplan 1995; Williams and Cary 2002; Miles, Coutts, and Mohamadi 2011; Seresinhe, Preis, and Moat 2015). However, few studies have examined the link between the social aspects of informal settlements and built environment features. A few examples from practice, including the recent hype of designer interventions in informal settlements, suggest that a link does exist.

Low-cost favela painting projects in Brazil – initiated by foreign designers – have resulted in much more attractive and playful-looking physical environments, have raised public awareness on development issues, have united local residents around a shared cause, and have instilled residents' pride in their local neighbourhoods. However, critics have also wondered whether designers are 'praying' on impoverished communities because they provide easy access to experimental work and self-promotion, and constitute a 'blank canvass' on which to project eccentric ideas and agendas. There is also concern that beautification and notoriety convert informal settlements into an iconic art image and thus camouflage the abject poverty and the real human beings that exist behind painted walls (De la Hoz 2013).

In the Global North, examples of 'tactical urbanism' abound, which effect lasting change through small-scale and community-based urban design projects – installing pop-up markets, converting parking to parklets, spray-painting bicycle sharrows, posting DIY wayfinding signs, and the like. Such initiatives help gain government support for investing in permanent projects and inspire locals to organize and shape their surroundings (Lydon and Garcia 2015). While tactical urbanism is most often associated with the educated middle classes, it is also a tool that can be used by the poor.

The theoretical conceptualization of the present study is illustrated in Figure 1. As seen, in this framework the effect of built environment stressors on social pathologies – *neighbourhood attachment*, *neighbourhood satisfaction,* and *social trust* – is mediated by individual stress. As noted, poverty itself is likely to be a stressor, in addition to built environment features, but the relationship between poverty and urban stress or other health outcomes is beyond the scope of this study. The quantification of 'stress' or 'quality of life' of barrio residents is also beyond the scope. In future studies, the indicators proposed in Urban Agenda of Habitat III (Quito, Ecuador) could be employed.

Literature review: development of informal settlements in Mexico and Mexico City

Mexico is a highly urbanized country with a middle-income economy. Rural-urban migration surged in the 1960s due to the country's rapid industrialization, the stagnation of agriculture, imbalances in economic, political and social character between cities and villages, and between the different regions (Mier y Terán 1998). The GDP per capita is approximately $10,000. However, incomes are distributed in a highly uneven manner, with an extreme

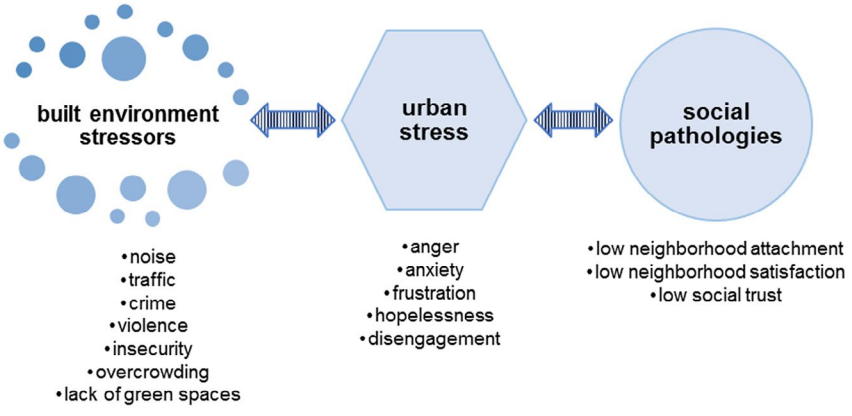

Figure 1. Theoretical conceptualization. Source: diagram by the authors.

polarization between rich and poor. Informality (i.e. a 'dual' system) is a main feature of the economy (Gilbert and Crankshaw 1999).

Mexico's political, economic and administrative structures are shaped by the legacies of the authoritarian era. In fact, social and organizational fragmentation have been among the government's strategies to maintain centralized control. This is another explanation for the massive migration from rural to urban areas. Informal settlements – a product of migration and social polarization – have been a hallmark of Mexican urban structures for decades.

Mexico City (*Ciudad de México*) is one of the largest megacities in the world, with more than 20 million inhabitants. It is a dominating city within the country, containing nearly one-fifth of the national population. By the 1950s, its urban growth had absorbed many surrounding towns and villages. In addition, since the 1960s Mexico City has been the major destination for rural migrants due to public policies favouring the capital (Perreault and Martin 2005).

In Mexico City, like other Latin American cities and unlike North American cities, the rich tend to live in the central areas at lower densities, while the poor live on the periphery at high densities. While the pattern is of course more complicated and dynamic than the affluent centre / poor periphery dichotomy (Garza and Schteingart 1978), this basic segregation pattern has been reinforced by successive investments in roads and other infrastructure systematically favouring the richer half of the city. The socio-economic segregation would be more severe were it not for the fact that 70% of Mexico City's housing has been informally produced, a situation that has led to a certain proximity between poorer socio-economic groups within the richer, southwestern areas of the city. In addition to the creation of new informal settlements, rural-urban migration to Mexico City has led to changes in the structure of established middle-income settlements and their transformation into slums (in terms of physical quality). In addition, many government-financed social housing projects built in the inner city for the working class have turned into slums (Rhoda and Burton 2010; Connolly 2017). While efforts have been made by consecutive governments and international organizations to regularize informal settlements and provide them with services, they remain the epicentre of crime, gang warfare, violence (often drug and alcohol related) and general distress.

Case study of Tepito

Centrally located (Figure 2), Tepito is one of the oldest settlements in Mexico City. Historically, it has been characterized by low-incomes, insecurity, external and internal conflicts, and informality (Rosales Ayala 1987; Maerk 2010). Its current population is approximately 38,000 inhabitants, down from 120,000 in the early 1990s, as people who can afford to move to a safer neighbourhood have been leaving the area. An estimated 10,000 people come in during the day to sell in the local open air markets (*tianguis*). Thus, not only is Tepito a residential district but it also has a rich history as a commercial area of skilled trades and workshops (Esteva 1991; Ramirez 2007).

The neighbourhood's origins date back to colonial times. In the mid-1800s, a new law in Mexico City forced landowners to sell their land to sitting tenants. This produced a new generation of owners in places such as Tepito. In the 1930s, another law established that sitting tenants who were able to prove they could not afford their rent could continue living in the property until their financial situation improved. Consequently, many people living in the centre of Mexico City argued that they were unable to afford their rent, a situation which lasted for at least six decades. As a result, many owners abandoned their properties which were transferred to the tenants. Given its central location and a lack of maintenance, by the mid-twentieth century, Tepito came to epitomize 'slums' in the capital. During the urban renewal ethos of the early 1970s, the local government attempted to 'clear' Tepito and relocate its residents to new social housing (in apartment buildings) outside the city (Eckstein 1990; Esteva 1991). This slum clearance process did not succeed in its entirety. Some people managed to remain in Tepito. Moreover, new migrants soon reoccupied the housing units and shops left behind by the families that moved. Other government efforts to transform

Figure 2. Map of Tepito. Source: map by authors, based on Google Earth aerial photos.

and modernize Tepito *in situ*, by implanting apartment buildings and prohibiting street vending, generally failed. The local residents resisted against such projects and strove to preserve their identity (Rosales Ayala 1987; Esteva 1991; Lombard 2014).

Following years of unsuccessful top-down housing policies, the local government's discourse eventually changed into one centred on public participation. However, nearly all the new programmes failed too, partly due to half-hearted efforts to involve local residents and partly due to corruption in the public administration. Currently, some partial upgrading programmes are ongoing. One of the most significant social policies introduced by the Mexico City government in recent years is the award-winning *Programa Comunitario de Mejoramiento Barrial*. This multi-million dollar programme, which has operated since the mid-2000s, involves extensive community and public participation in neighbourhood improvements. Several communities in Tepito have participated in this programme and many residents have supported it. However, overall, physical design and neighbourhood maintenance are poor (Figure 3). In terms of land tenure, at present it is virtually impossible to know for sure who owns what in Tepito. The cadastre might show one de jure owner but the de facto owner is another. Some householders claim to own their homes but their documentation is incorrect or incomplete.

Reputedly, this neighbourhood is one of the 'toughest' places in the whole country, plagued by crime and frequent police raids. It is locally known as the '*barrio bravo*' or rough neighbourhood (Ramirez 2007). The governments of Marcelo Ebrard and Felipe Calderón were both adamant in reducing crime in Tepito. Numerous violent police interventions in the barrio (both federal and city-level) generated important social unrest. These interventions happened at the same time that efforts were being realized to address issues of public space in the area. These contextual issues help to understand the complexities around public life, urban design and state intervention in Tepito.

Figure 3. Tepito public spaces. Source: photo by Adam Brasher / Flickr [CC License].

Methodology

This study is based on 20 semi-structured in-depth interviews of Tepito residents. This sample size is deemed adequate for narrow-focused qualitative research (Baker and Edwards 2012). The interviews were conducted in Spanish, and each lasted about half an hour on average. They were voice recorded, and later transcribed, translated into English, coded and analyzed in *Nvivo*. Given the practical difficulties of collecting a random sample in a barrio context, a snowball sampling method was used, which is recommendable for locating information-rich participants. Upstanding members of the community were specifically sought, who knew the area better than others and were willing to participate in the research. (Tepito residents, being constantly in conflict with authorities and the police, are usually very reluctant to talk to outsiders about their community.) The age of the interviewees ranged from 18 to 82, with 12 interviewees being middle-aged (50–65 years old). The gender split was equal, and nearly all the interviewees had lived in Tepito their whole life.

The interview questions aimed to explore the residents' level of (1) *neighbourhood attachment*, (2) *neighbourhood satisfaction* and (3) *social trust* in relation to the quality of Tepito's built environment (focusing on public outdoor spaces). The neighbourhood attachment concept was operationalized through questions about why people liked or disliked their neighbourhood, whether it was worthwhile to improve their neighbourhood, and whether they intended to participate in neighbourhood improvement efforts. The neighbourhood satisfaction concept was operationalized through questions about the level of satisfaction with the neighbourhood physical space and the community. The social trust concept was operationalized through questions about mutual help between neighbours, past cooperation efforts to improve the neighbourhood, and safety and security perceptions over time.

The data were interpreted based on the researchers' understanding of the context in Tepito and Mexico City (one of the researchers is from Mexico City). Due to the vulnerable position of the interviewees, no potentially identifying data (e.g. demographic data) are reported in this paper.

Findings

The interviews reveal a low level of social trust, a low level of neighbourhood satisfaction and a high level of neighbourhood attachment among barrio residents. A discussion of these a priori themes follows, in relation to the quality of various built environment features and to the engagement of local residents. Interviewees' views have been summarized in the text for the most part, but a few direct quotes (enclosed in quotation marks) are reported as well.

High neighbourhood attachment

The interviews reveal that local residents are rather attached to Tepito, although they voice many complaints in terms of physical space and maintenance. The most important findings are the reasons behind such strong attachment. Most people feel love for, and loyalty to, the place in which they are born and raised, and with which they are most familiar – its many faults notwithstanding. In some sense, this barrio, seen as an abstract entity, personifies 'family' to the respondents. Many also feel a sense of pride derived from living in such an old and well-known settlement which has a place in the history of Mexico City. This is also

confirmed by the fact that most respondents are absolutely positive that Tepito has 'a lot to offer' and must be preserved and upgraded rather than undergo urban renewal. The following comment is typical: 'Tepito represents the traditional side of Mexico City, and I just love being a part of it'. A strong sense of place among informal settlement dwellers, in the face of physical disrepair, has been noted by John Turner since the 1970s in his pioneering work *Housing by People*, informed by his work in Peru (Turner 1976).

At the same time, in the present study some of the responses with regard to neighbourhood maintenance and cleanliness are underpinned by a sense of shame. When questioned on these matters, the residents' enthusiasm fades and is replaced by reserve. People say that they feel humiliated about having to live in a dirty and neglected place, walk by refuse piles on the way home, and be faced with peeling façades, dilapidated walls and decrepit public spaces. These responses, and especially the manner in which they are provided, confirm a deep place attachment: people feel perfidious and sad about having to criticize their neighbourhood. Moreover, they confirm that barrio dwellers, although poor, do aspire to live in neat, green and generally dignified spaces, just like the middle classes. Their other needs (i.e. access to employment, health care and education) although crucial, do not completely override a desire for urban aesthetics. Urban design and maintenance are not trivial pursuits in these settings.

When asked whether they would like to be personally involved or contribute in kind to urban upgrading efforts, all interviewees respond affirmatively and feel that it would be 'worth it'. They offer to help paint houses, clean the streets, put rubbish away and plant flowers. This is an important finding as it indicates that any small-scale urban design projects in the neighbourhood can capitalize on the residents' support. Moreover, this finding clearly shows that local expectations are minimal and could be accommodated with a small amount of public funding. Some very simple actions have a high potential to improve the quality of life and well-being of residents in this impoverished place.

Low neighbourhood satisfaction

In view of a strong neighbourhood attachment, one might expect high levels of neighbourhood satisfaction. The opposite is true. Residents are so dissatisfied with the quality of the neighbourhood that nearly all have considered moving at one time or another. However, strong neighbourhood ties, coupled with limited financial resources, have persuaded them to remain in Tepito.

Interviews reveal many concerns of the residents in terms of public space availability, appearance and maintenance. Residents are upset that the area lacks parks and the few available ones are in a deplorable condition and are even dangerous. (Some are monopolized by male gang members who use them for boxing and other physical exercises, or for loitering and drinking.) A lack of green and safe spaces for children to play is particularly frustrating for parents. The general dirtiness of the area, with rubbish strewn around and unswept streets, is a major source of complaints. Noise – generated by the loud music that local stores play past midnight, as well as aggressive motorcycle riding – is also a major source of frustration and even anger. Residents complain that due to noise they cannot rest at night and are unable to find peace and quiet even within their homes. These types of answers highlight the fact that poor residents share many 'bourgeois' values in terms of public space. They dislike the rowdy behaviour of others and would prefer serenity and consideration.

Part of the dissatisfaction stems from a comparison with other, wealthier parts of the city. Tepito's residents are acutely aware that Mexico City is not entirely made up of barrios, colonias populares or conjuntos. On the contrary, it also has many pleasant, leafy neighbourhoods for the middle and upper classes. These features are entirely lacking in Tepito. Alertness to the longstanding inequalities in Mexican society is evident in these answers; possibly the answers might have been different if urban spaces had similar quality across the city. However, the responses also indicate the modest expectations of these residents, as noted earlier. All they desire in terms of public space improvements is better lightning at nighttime, street cleaning, garbage collection, noise controls, a few playground areas for children, some activity spaces for adults and more colours (in keeping with the local artistic taste).

The public space deficiencies are more troublesome to locals than the poor appearance of private houses, most of which are considered to have an 'average' exterior and be adequately set up for daily living. The fact that many houses in the area are older and traditional tempers the fact that they are in humble condition. Once again, this finding shows that barrio residents share some of the middle-class values in terms of appreciation of heritage housing stock.

Low social trust

A low level of neighbourhood satisfaction is associated with a low level of social trust. While people typically have a circle of loyal friends and family members in Tepito, they are not engaged with the community at large. They tend not to trust strangers in the neighbourhood. As a result, community cooperation, and especially security, in public spaces is very low and appears to have decreased over time. (Older respondents reminisce about the 'good old days' when neighbours used to provide mutual help and collaborate in improving the neighbourhood.) To some, a lack of community cooperation, engagement, initiative and responsibility is even more troubling than the poor quality of public spaces in itself. In terms of public space improvements, respondents willingly offer their personal services in installing urban design features, as noted. However, most feel that no matter how much effort they personally invest in improving and maintaining public spaces, others will either not cooperate or will even undermine those efforts. Clearly a 'broken window' scenario is at play here.

Insecurity is major problem for local residents. Most fear that they will fall victim of violence and robberies if they walk around alone for too long, especially in parks and other less visible places. This generates another vicious circle where public spaces are used even less, thus becoming deprived of additional sets of 'eyes on the street', precisely the eyes of those who are unlikely to perpetrate crimes. Such a retreat from public space into the private sphere does not bode well for engagement and democracy. While Mexico City's security issues are notorious, this finding hints that poor people living in barrios might be disproportionately affected by crime and violence compared to higher income individuals who are better protected in their gated communities and automobiles (but additional research is needed to prove this point). It also suggests that urban design interventions in these settings need to be very sensitive to security issues. For example, parks too crowded with beautiful features that hide perpetrators might be undesirable here.

In general, the responses echo a sense of powerlessness and resignation, which some express through sarcasm (a defence mechanism). Nearly all residents argue that the responsibility for public space improvements and surveillance is in the hands of external entities, such as the government, private businesses and the police, rather than the local community.

Clearly, people do not think of themselves as having the potential to resolve problems by physically improving their surroundings, and thus externalize the responsibilities (another defence mechanism). This finding is in contradiction with the fact that many residents are willing to participate in area improvements. This situation leads to profound disillusionment and cynicism for most. It is a discouraging finding because it undercuts the hope that locally based initiatives can bring improvements to the area. Hopelessness derived from low social trust can only add to the urban stress, and might even override the positive effects of high neighbourhood attachment.

Conclusion

This study set out to explore whether smaller-scale urban design interventions have the power to alleviate the stress and social pathologies experienced by the residents of Tepito, a barrio in Mexico City. The results support the idea that an 'urban acupuncture' approach has a high potential in this respect. The interviews revealed that Tepito's residents share many middle-class values in terms of urban space quality, although their expectations are much more modest. Just like the wealthier and educated portions of the population, they too aspire to live in dignified, clean, safe and green neighbourhoods. The lack of these features produces considerable stress, anger and frustration, as well as low neighbourhood satisfaction, low social trust, disengagement and disenfranchisement.

Significantly, neighbourhood attachment is high in Tepito – urban design, maintenance and violence issues notwithstanding – and could be harnessed in order to physically improve the neighbourhood, strengthen social ties, dispel hopelessness and help people live more contented lives while remaining in their area. Once again, these findings highlight the weaknesses of the 'culture of poverty' theory formulated by Oscar Lewis (1961) based on anthropological research in Tepito, which maintains that the poor own a poverty-perpetuating value system and cannot rise above the limitations of their time and circumstances.

The social pathologies identified in this study might not be inherent to low-income neighbourhoods. They may be present (and perhaps even more severe) in other areas of Mexico City which were not included in the study. However, given this study's focus on informal settlements, a major recommendation for policy makers working with local residents is to focus on open and public space improvements in the short term, while progressing in parallel on longer-term projects to improve major social infrastructure and politically organize locals. Local participation is crucial in empowering residents and overcoming a lack of community-based action in defence of good urban space.

Of course, that people say that they would participate in 'urban acupuncture' interventions is one thing, but whether or not they would do so in practice is another. In terms of future research, it is important to survey the views of the public sector and other stakeholders, in addition to residents, as this would determine the real feasibility of any public space interventions. Structural barriers might be in place which preclude the revitalization of public spaces in informal settlements, and those need to be uncovered and examined as well.

Clearly, physical planning does not have the power to cure all the ills of contemporary societies. Such an environmental deterministic stance would be reductionist, especially in the context of informal settlements. It is certainly possible that participants' discontent around public space has to do with a general discontent over the government, given its responsibility over the provision of public services, and with the tense state-community relationship in

Mexico. Physical design cannot be a silver bullet to resolve all problems of social cohesion, political apathy and individual stress but only one tool to alleviate these problems.

Note

1. 'Overcrowding' is a different concept from 'density'. While 'density' refers to the physical limitation of space, 'overcrowding' is the psychological perception of the limitation of space.

Disclosure statement

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ORCID

Dorina Pojani http://orcid.org/0000-0002-2018-6338

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